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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/509,855	09/30/2004	Eiji Ihara	Q69582	4304

23373 7590 11/23/2005

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EXAMINER	
MARCHESCHI, MICHAEL A	
ART UNIT	**PAPER NUMBER**
1755	

DATE MAILED: 11/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/509,855	IHARA, EIJI	
	Examiner	Art Unit	
	Michael A. Marcheschi	1755	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 September 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 7, 9, 10, 17 and 19-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 7 is indefinite as to the limitation "the outermost layer of the **metal layer**" because it is confusing and not clearly defined. Are applicants trying to define that the metal layer is a multilayer? If so, the claim should be rewritten to clearly define this (as long as support is provided for any amendments).

Claim 9 is indefinite because it defines that the bonding metal can further comprises nickel but claim 1 already requires that nickel be present, thus how does this further limit the claim. In addition, claim 1 uses the phrase "composed of" which is closed language but claim 9 defines further components of the bond, thus the scope of claim 9 is outside the scope of the closed language used in claim 1.

Claim 10 is indefinite because it defines the bonding metal is nickel-phosphorus but this is already defined in claim 1. In addition, which respect to the nickel metal alone, this is outside the scope of claim 1. In view of this, claim 10 should be canceled.

Claim 17 is indefinite as to the limitation "Grinding wheel **using**" because it does not clearly define the grinding wheel.

Claim 19 is indefinite as to the limitation "Coated abrasive **using**" because it does not clearly define the grinding wheel.

Claim 20 is indefinite because it does not clearly define the method of making a metal coated abrasive which is **bound by a bonding metal** as required by claim 2. Claim 20 only defines how the coating is accomplished but does mention how the bonding is accomplished (i.e. is it by sintering, infiltrating, etc.). In addition, applicants appear to use the limitation "a metal" freely yet the claim does not accurately reflect back to the metal layer or bonding metal of claim 2, thus having proper antecedent basis is not apparent. Is the metal layer of this claim, referring to the metal layer of claim 2. In view of this, the scope of the claim is unclear.

Claim 21 is indefinite because it defines a bonding process using "**a** metal" and the examiner is unclear as to if this metal is different from the bonding metal defined in claim 1 or is it intended to be the same. In addition, applicants appear to use the limitation "a metal" freely yet the claim does not accurately reflect back to the bonding metal of claim 1, thus having proper antecedent basis is not apparent. In view of this, the scope of the claim is unclear. The claim should be rewritten to clearly define what applicants mean.

Claim 22 is indefinite because it defines a process using "**a** metal" and the examiner is unclear as to if this metal is different from the metal defined in claim 2 or is it intended to be the same. In addition, this claim taken by itself, implies that the metal layer on the surface and the metal layer used to accomplish bonding are the same. This is apparent because the claim does not define the specific bonding metal of claim 1. Applicants appear to use the limitation "a metal" freely yet the claim does not accurately reflect back to the metal layer or bonding metal of claim 2, thus having proper antecedent basis is not apparent. The claim should be rewritten to clearly define what applicants mean.

Claims 1-16 and 19-20 are rejected under 35 U.S.C. 103(a) as obvious over Slutz et al. in view of Grotepass et al.

Slutz et al. teaches in the abstract, column 2, lines 40-43, column 5, lines 1-36, column 6, lines 19-68 and column 7, lines 44-55, a plurality of metal coated abrasives comprising a plurality of metal coated (diamond, etc.) particles coated with at least one layer of an active coating material (active coating material can be any metal or alloy which chemically bonds with the surface of the abrasive or coating thereon, and is preferably nickel or cobalt-column 5, lines 31-36) . The coated particles can either be (1) bound together by the coating material (column 6, lines 61-64) **or** (2) stored for subsequent use by combining with a metal bonding matrix (column 6, lines 58-60 and column 7, line 44-47).

Grotepass et al. teaches in column 1, line 60-column 2, line 1, that nickel-phosphorous is a known bonding matrix for diamond particles (used to make diamond bonded tools).

Slutz et al. states that the coated particles can be combined with a metal bonding matrix and the use of nickel-phosphorous as the bonding matrix would have been well within the scope of the skilled artisan because Grotepass et al. teaches that this material is a conventionally known metal bonding matrix for diamond particles. In other words, one skilled in the art would have appreciated the use of nickel phosphorus as the binding matrix according to Slutz et al. because this is a conventional metal bonding matrix for diamond particles as shown by Grotepass et al. In addition, Slutz et al. does not specifically define the metal bonding matrix, thus it is the examiners position that the lack of specific metal bonding matrix implies to the skilled artisan that any conventional metal bonding matrix (known for the same purpose-bonding diamond particles together) can be used and since Grotepass et al. teaches that the claimed metal bonding

matrix is conventional, its use thereof is well within the scope of the skilled artisan. In view of this, claims 1, 9 and 10 are met.

With respect to the coating layers of claims 2-6 and 8, Slutz et al. clearly defined these limitations.

With respect to claim 7, Slutz et al. states "at least one layer of an active coating material" and since nickel is defined and the coating can be multiple layers, as implied, the broad interpretation of the reference is that nickel can be the outmost layer.

With respect to claims 11-14, Slutz et al. teaches abrasive grains and size thereof which encompasses the claimed range

With respect to claims 15-16, Slutz et al. states that the particles obtained are bound by a matrix and the broad interpretation of particles implies 2 or more, thus encompassing the claimed content.

With respect to claim 19, Slutz et al. defines using the metal coated abrasive to make coated abrasive articles (column 7, lines 54-55).

With respect to claim 20, Slutz et al. teaches that the metal layer(s) are formed by the same techniques.

Claim 17 is rejected under 35 U.S.C. 103(a) as obvious over Slutz et al. in view of Grotepass et al. alone, as applied to claim 1 above or further in view of Conradi.

Conradi et al. teaches in claim 1 a conventional amount of diamond particles to be used in metal bonded abrasive bodies.

With respect to claim 17, Slutz clearly states that the coated grains are used in a metal bonding matrix to form a tool and although this reference is silent with respect to the amount of diamond in the tool, it is the examiners position that one skilled in the art would have appreciated that at least 5% diamonds must be present in order to obtain the most beneficial grinding tool (i.e. less than 5% would not produce a tool with optimized abrasive quality) absent evidence to the contrary. In the alternative, it is the examiners position that one skilled in the art would have appreciated the amount of diamonds required to obtain a metal bonded abrasive with the most beneficial abrasive properties, said amount being consistent with the conventional amount defined by Conradi. Although the amount is defined in volume percent when converted to weight percent, it appears to encompass the claimed broad range absent evidence to the contrary.

Claims 18 and 21 are rejected under 35 U.S.C. 103(a) as obvious over Slutz et al. in view of EP 786506.

The EP reference teaches in the abstract and on page 5, lines 19-24 that it is known to coat diamonds with nickel phosphorous.

Slutz et al. teaches that the active coating material can be any metal or alloy which chemically bonds with the surface of the abrasive **or** coating thereon. In view of this, it is the examiners position that from reading this passage one skilled in the art would have found the use of any known active coating material obvious, thus one skilled in the art would have appreciated that the coating for the particles can of the be nickel phosphorus because this is a well known active coating material for diamonds as shown by the secondary reference. Although the EP reference does not mention that this material forms chemical bonds with the surface of the

abrasive or coating thereon, it is the examiners position that some kind of chemical bonding (even if it is minimal) will occur between the abrasive surface or previous coating and the nickel-phosphorus coating absent evidence to the contrary. With this coating being obvious, Slutz et al. states that the coating on the particles bonds a plurality of particles together to form a multigrain mass in the form of particles (column 6, lines 61-65) and that the multigrain particles can be incorporated into a resin matrix (column 7, lines 44-47). In view of this, the scope of claim 18 is met.

With respect to claim 21, it is the examiners position that if the coating is applied by electroplating or electroless plating, as is clearly shown by both references, it is the examiners position that using a simultaneous process of coating and bonding would have been appreciated by the skilled artisan in order to minimize the cost of process. In other words, although Slutz et al. implies that the particles are first coated and a plurality of particles then sintered together, it is the examiners position that using a simultaneous process of coating and bonding would have been appreciated by the skilled artisan in view of economics factors. A simultaneous process is less time consuming (and thus more economical) when compared to a multi step process.

Claim 22 is rejected under 35 U.S.C. 103(a) as obvious over Slutz et al. in view of EP 786506 in view of Roy.

Roy et al. teaches in column 2, lines 55-57 and the example limitations known for electroless plating of diamonds.

Slutz et al. teaches that the active coating material can be any metal or alloy which chemically bonds with the surface of the abrasive **or** coating thereon. In view of this, it is the

examiners position that from reading this passage one skilled in the art would have found the use of any known active coating material obvious, thus one skilled in the art would have appreciated that the coating for the particles can of the be nickel phosphorus because this is a well known active coating material for diamonds as shown by the secondary reference. Although the EP reference does not mention that this material forms chemical bonds with the surface of the abrasive or coating thereon, it is the examiners position that some kind of chemical bonding (even if it is minimal) will occur between the abrasive surface or previous coating and the nickel-phosphorus coating absent evidence to the contrary. With this coating being obvious, it is the examiners position that if the coating is applied by electroplating or electroless plating, as is clearly shown by both references, one skilled in art would have appreciated the steps used, which include, immersion of the diamonds in a plating bath with stirring, as is clearly shown by Roy as being a conventional way to electroless plate diamonds. Although Roy does not literally define "dipping", it is the examiners position that that once the particles are plated, they are removed from the bath, thus dipping, in its broad interpretation is appreciated. This reference clearly stirring and the use of stirring is for a more homogeneous deposition and to keep the solution in a homogeneous state. Although a simultaneous coating and bonding process is not defined, it is the examiners position that using a simultaneous process of coating and bonding would have been appreciated by the skilled artisan in order to minimize the cost of process. In other words, although Slutz et al. implies that the particles are first coated and a plurality of particles then sintered together, it is the examiners position that using a simultaneous process of coating and bonding would have been appreciated by the skilled artisan in view of economics factors. A

simultaneous process is less time consuming (and thus more economical) when compared to a multi step process.

In view of the teachings as set forth above, it is the examiners position that the references reasonably teach or suggest the limitations of the rejected claims.

Applicant's arguments with respect to claims 1-22 have been considered but are moot in view of the new ground(s) of rejection.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

A reference is good not only for what it teaches but also for what one of ordinary skill might reasonably infer from the teachings. ***In re Opprecht*** **12 USPQ 2d 1235, 1236 (CAFC 1989);** ***In re Bode*** **USPQ 12;** ***In re Lamberti*** **192 USPQ 278;** ***In re Bozek*** **163 USPQ 545, 549 (CCPA 1969);** ***In re Van Mater*** **144 USPQ 421;** ***In re Jacoby*** **135 USPQ 317;** ***In re LeGrice*** **133 USPQ 365;** ***In re Preda*** **159 USPQ 342 (CCPA 1968). In addition, "A reference can be used for all it realistically teaches and is not limited to the disclosure in its preferred embodiments" See** ***In re Van Marter*****, 144 USPQ 421.**

Evidence of unexpected results must be clear and convincing. *In re Lohr* 137 USPQ 548. Evidence of unexpected results must be commensurate in scope with the subject matter claimed. *In re Linder* 173 USPQ 356. To establish unexpected results over a claimed range, applicants should compare a sufficient number of tests both inside and outside (i.e. as well as the upper and lower limits) the claimed range to show the criticality of the claimed range. ***In re Hill 284 F.2d 955, 128 USPQ 197 (CCDPA 1960).***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael A. Marcheschi whose telephone number is (571) 272-1374. The examiner can normally be reached on M-F (8:00-5:30) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on (571) 272-12331233. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MM
11/05

Michael A Marcheschi
Primary Examiner
Art Unit 1755